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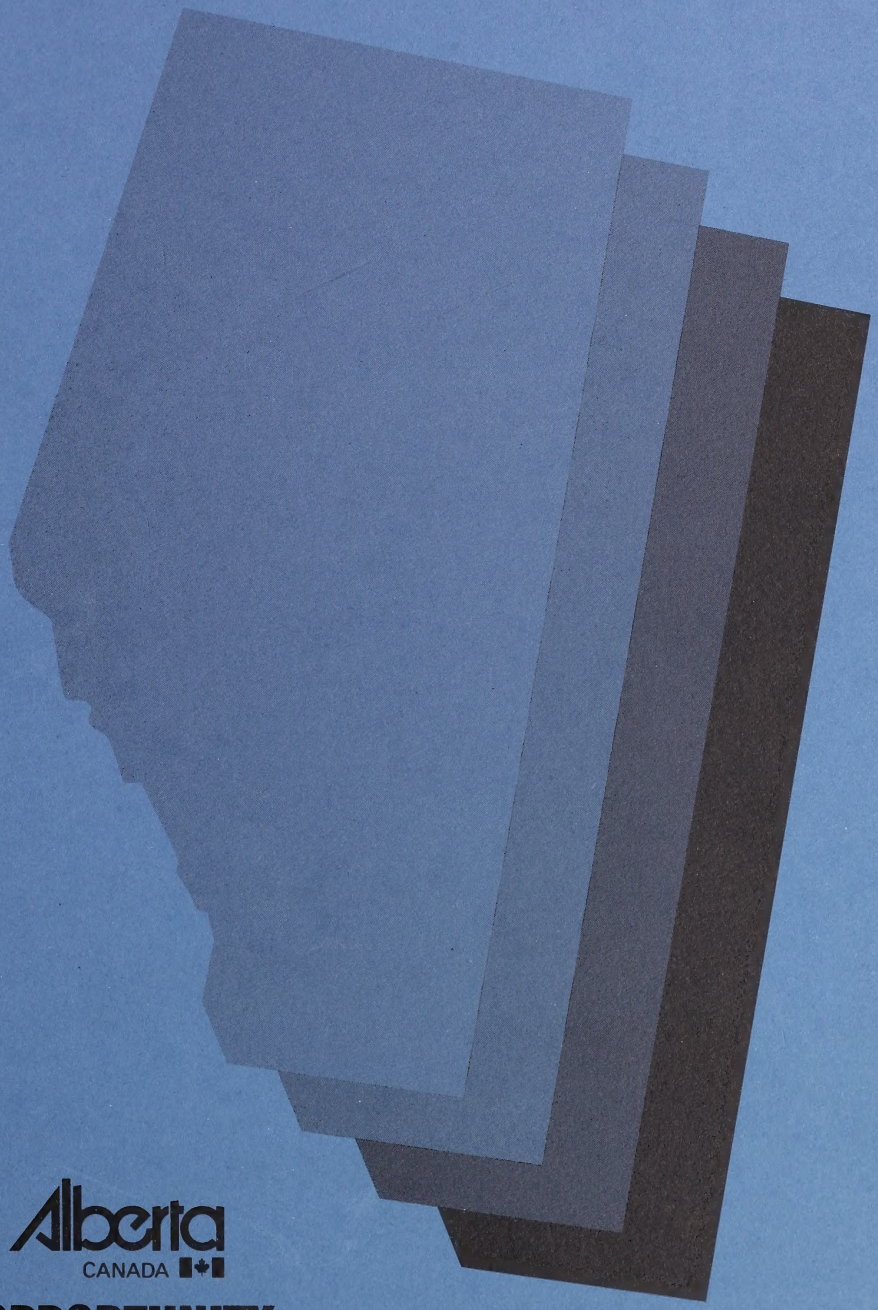
Economic Development and Trade

# Profile of the Alberta Manufacturing Sector 1987



Alberta
CANADA

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# PROFILE OF THE ALBERTA MANUFACTURING SECTOR

June, 1987

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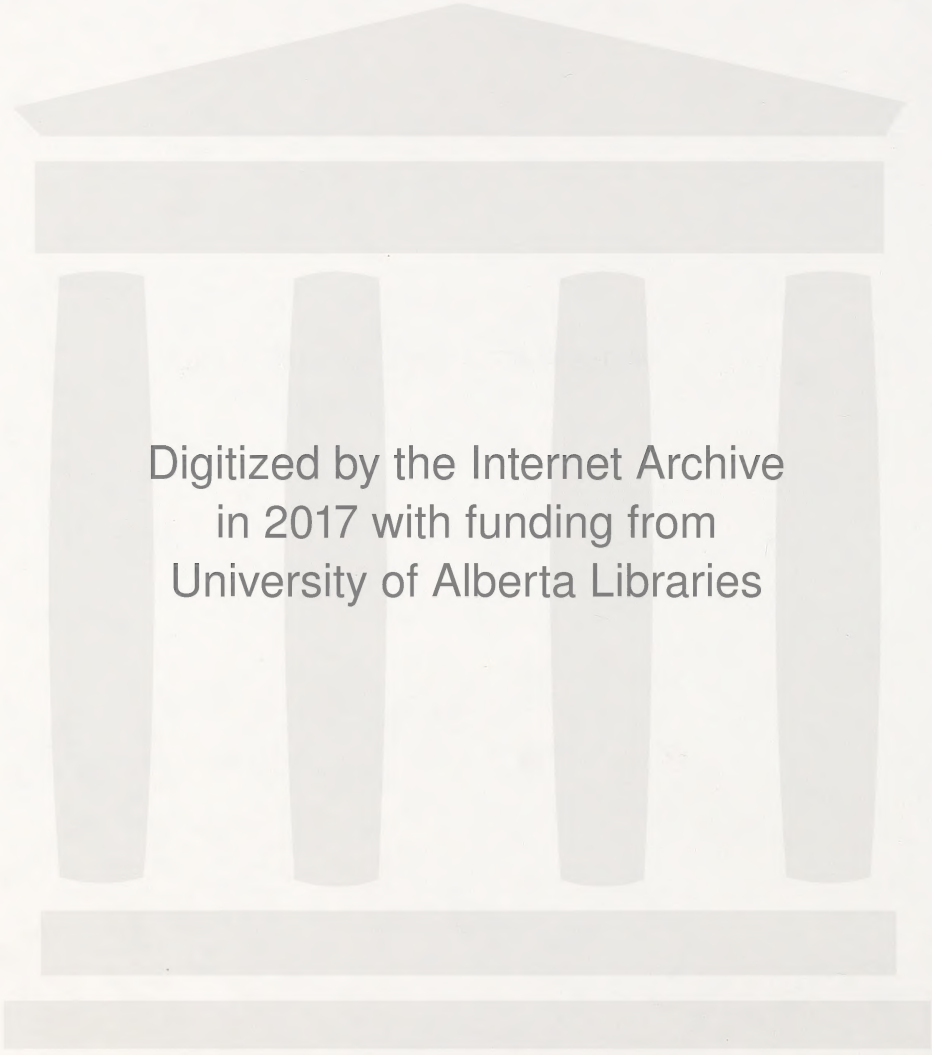
Industry Development Division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# THE ALBERTA MANUFACTURING SECTOR

# Current Economic Indicators

## Alberta Manufacturing Sector

| | 1984 | 1985 | 1986 |
|---|---|---|---|
| Employment[1] | 88,000 | 87,000 | 89,000 |
| Value of Shipments[2] ($ Million) | 14,823 | 16,141 | 15,435 |
| Exports[3] ($ Million) | 2,536 | 2,858 | 2,633 |
| Investment[4] ($ Million) | 1,125 | 845 | 1,059 |
| Capacity Utilization[5] (percent) | 69 | 74 | 73 |

1 - Source: - Statistics Canada

2 - Source: - Statistics Canada, Estimated Value of Goods of Own Manufacture

3 - Source: - Statistics Canada, Commodity Exports

4 - Source: 1984-86 - Statistics Canada, Private and Public Investment

5 - These are estimates by Economic Development & Trade based on industry contacts, Statistics Canada national data, and other secondary sources.

# THE ALBERTA MANUFACTURING SECTOR

## PROFILE AND OVERVIEW

- The manufacturing sector in Alberta has traditionally been overshadowed by the oil and gas industry which dominates the provincial economy. In 1986, manufacturing accounted for just under 16 percent of the net value of production or value added of the goods producing industries in Alberta, compared to 60 percent for the mining sector (primarily oil and gas).

- In 1986, the manufacturing industry provided employment for 89,000 persons in Alberta, just under 8 percent of the total employed workforce. In comparison, for Canada as a whole, the manufacturing industry accounted for roughly 17 percent of the employed workforce.

- Approximately 16 percent of Alberta's manufacturing shipments are exported to markets in the U.S. and overseas. The principal commodity exports include petrochemicals, pulp, lumber, oilfield equipment, processed red meats, and refined petroleum products. Petrochemicals alone account for nearly one half the value of Alberta's exports of manufactured products.

- Based on the Statistics Canada Standard Industrial Classification (SIC) System, the manufacturing sector consists of 18 major industry subgroups. In Alberta, three of these industry subgroups - refined petroleum products, food industries, and chemical and chemical products - make up more than two-thirds of the value of total manufacturing shipments. The following chart provides a breakdown of manufacturing shipments by the leading industry categories.

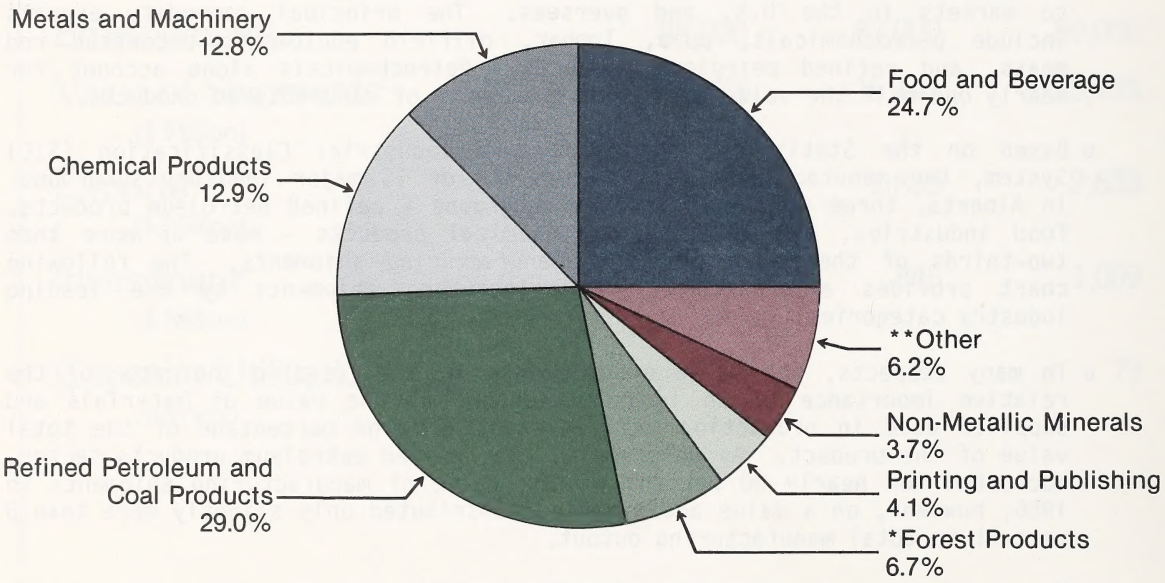
- In many respects, the value of shipments is a misleading indicator of the relative importance of an industry sector, as the value of materials and supplies used in production may represent a large percentage of the total value of the product. As an example, the refined petroleum products sector, accounted for nearly 30 percent of the value of manufacturing shipments in 1986; however, on a value added basis, contributed only slightly more than 8 percent to total manufacturing output.

- Value added or net value of production is defined as the value of shipments less the cost of purchased materials and supplies used in production. In the case of the refined petroleum products industry, purchases of crude petroleum make up a large proportion of the finished product price, which does not contribute to the net output of the economy.

- In terms of value added, the four most important manufacturing sectors are the metal and machinery industries, chemical and chemical products industries, food processing industries and the forest product industries. Together these sectors account for approximately two thirds of the net value of production.

## Composite of Alberta Manufacturing

**(Value of Shipments - 1986)**

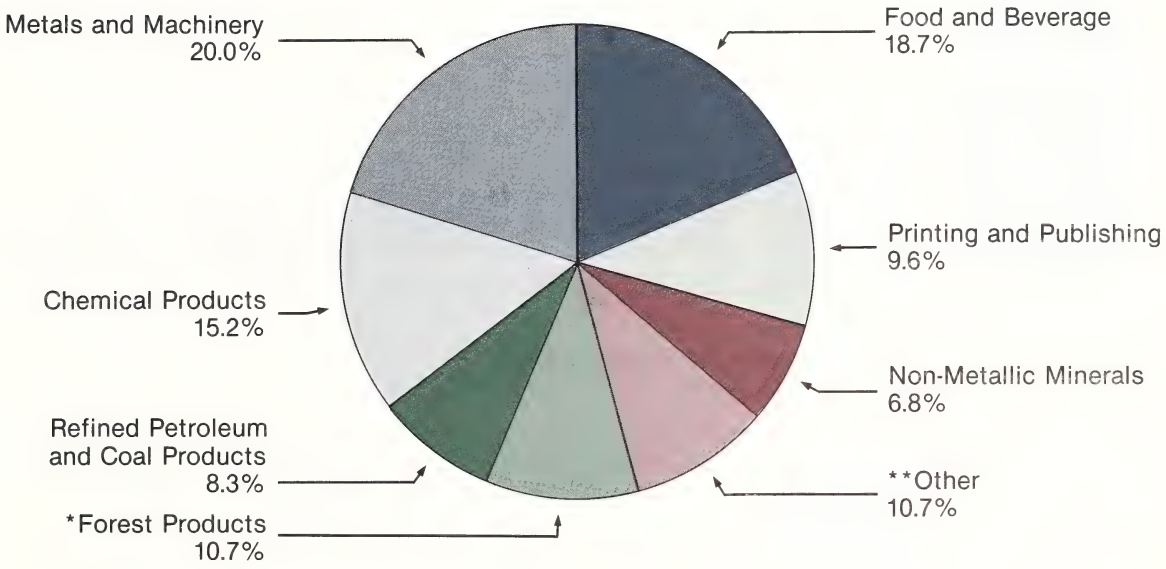



* Includes lumber, pulp, panel board products and secondary wood products

** Includes Consumer Products (2.3%), Electrical Products (1.7%), Plastic Products (1.6%) and Miscellaneous Products (0.64%)

## Composite of Alberta Manufacturing

**(By Value Added - 1986)**

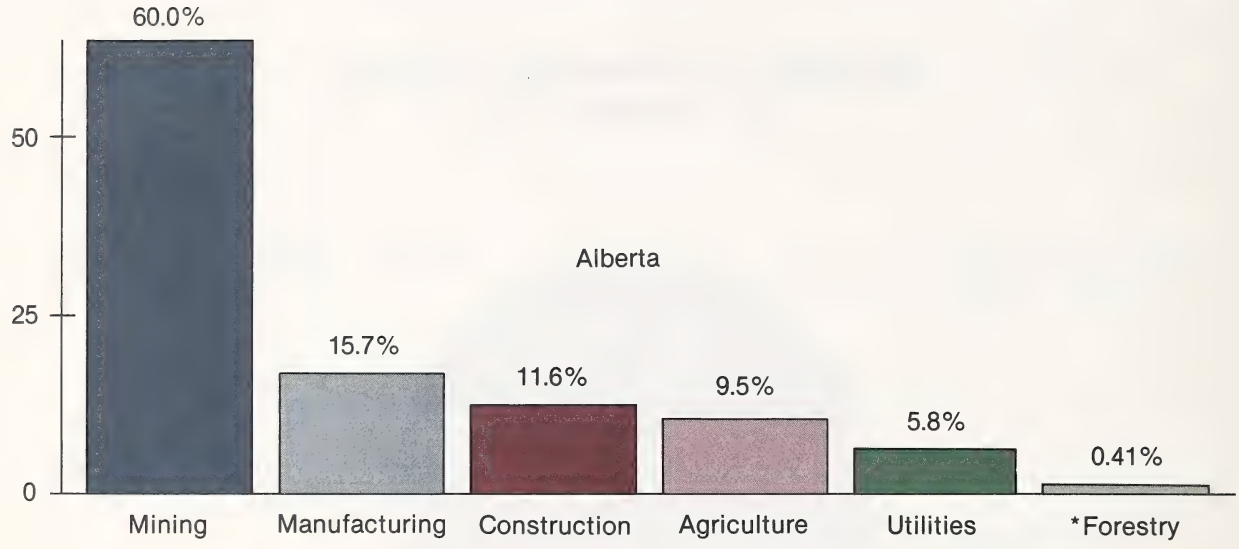


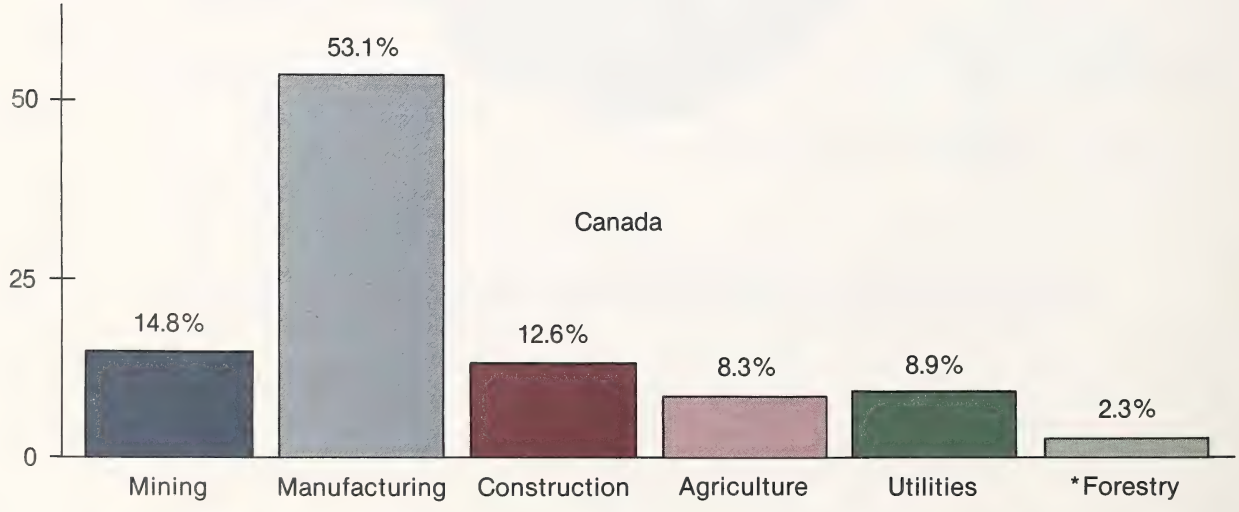

* Includes lumber, pulp, panel board products and secondary wood products

** Includes Electrical Products (2.7%), Plastic Products (2.5%), Consumer Products (2.4%) and Miscellaneous Products (3.1%)

# Comparative Percentage Breakdown of Goods Producing Industries, Alberta, Canada

**(Based on Value Added - 1986)**




* Includes Fishing and Trapping

## RECENT PERFORMANCE

- Much of the manufacturing activity in Alberta is tied to the oil and gas industry, and therefore is affected by the cyclical swings in energy investment activity.

- Despite this link with the energy sector, there is sufficient diversification within the manufacturing industry to prevent the wide swings in employment and investment that have occurred in the oil and gas industry. In this respect, the manufacturing sector has acted as a stabilizing force in the Alberta economy. Manufacturing industries not directly tied to the energy sector (eg. forest products, plastics and electronic industries, and consumer products) are effective counter cyclical industries.

- Total employment in the Alberta manufacturing sector averaged 89,000 in 1986, 2 percent higher than in 1985. Reductions in employment levels in the oilfield equipment manufacturing sector were more than offset by gains in other sectors, particularly forest products, chemicals, and electrical products industries.

- Total investment activity in the manufacturing sector increased by an estimated 25 percent in 1986, due to the construction of a number of major projects such as the Pelican Spruce Mills oriented strand board plant, AEC/Cominco fertilizer plant, Alberta Gas Ethylene's (AGE) hydrogen purification plant and AGE's pellitizing plant (refer to list of major manufacturing projects).

- In 1986, the total value of manufacturing shipments in Alberta declined by 4.4 percent to $15.4 billion, however real output remained unchanged or declined only slightly (less than 1 percent) compared to 1985. This indicates that the decline in the value of shipments is primarily due to price adjustments rather than changes in volume of production.

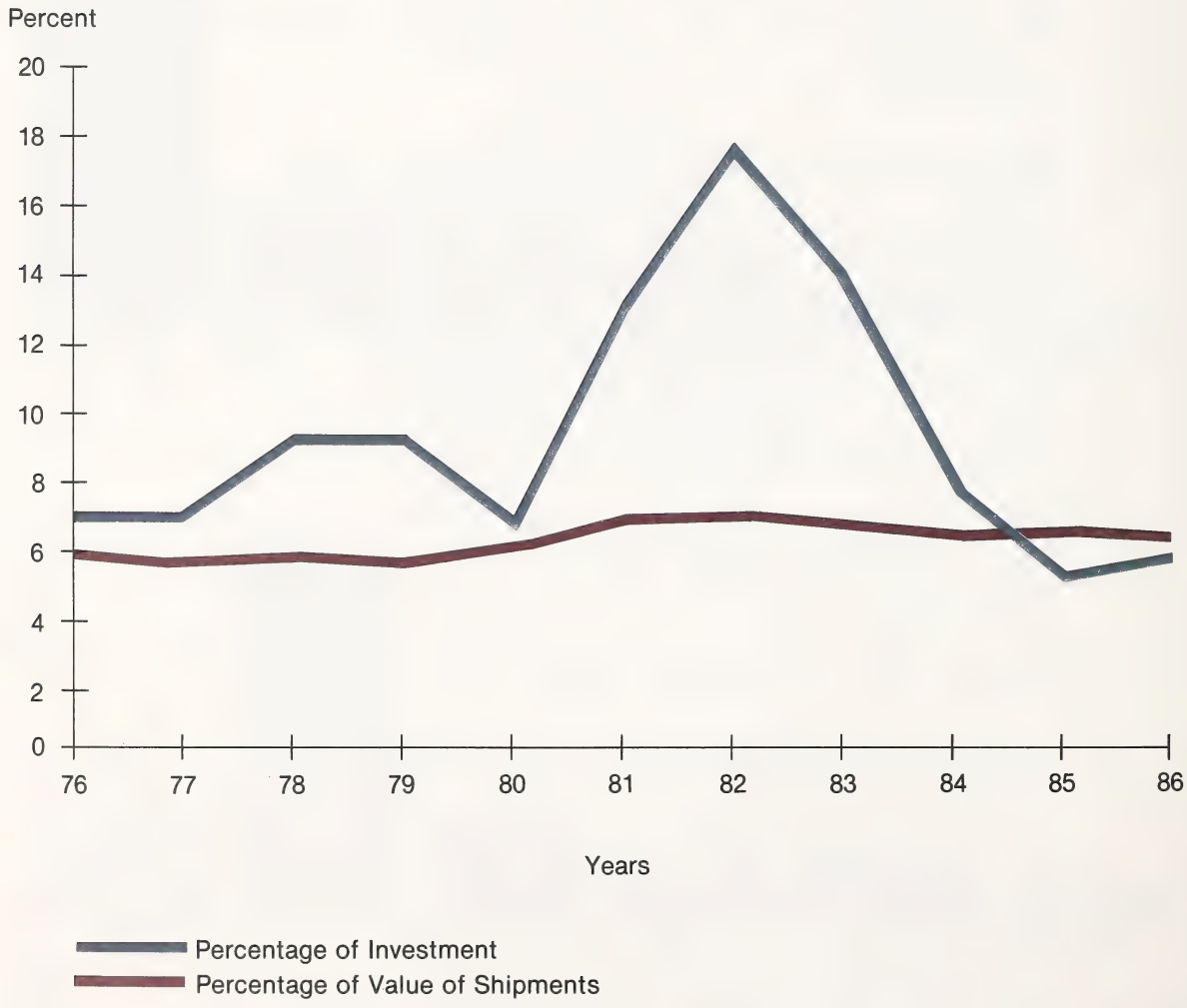
- Much of the nominal decline in value of shipments in 1986 can be attributed to lower petroleum product prices (gasoline, diesel fuel) and petrochemical prices. It should be noted that these industries also benefited from lower crude petroleum and petrochemical feedstock prices. In fact, in the refining industry, the margins improved significantly in 1986 as crude prices dropped by more than the product prices. Real output in these industries remained relatively constant in 1986.

- In the food and beverage sector, a decline in local cattle slaughter and disputes in the pork industry have reduced the volumes of red meat shipments, offsetting some of the gains in the beverage industry. Total current value of shipments dropped about 1 percent in 1986.

- The forest products industry (lumber, pulp and panelboard products) enjoyed a bouyant year as both lumber and pulp prices rose in 1986. Lumber sales reached record levels (exceeded 1.3 billion board feet) despite the threat of U.S. countervail duty action. The value of pulp exports has risen sharply after three consecutive price increases in the second half of 1986. Overall, the current value of forest product shipments was up 15 percent last year.

## Alberta's Share of Manufacturing

**Investment and Value of Shipments in Canada**



- The metals and machinery industries which are largely dependent on oil and gas investment activity, have experienced sharp declines in shipments in recent months due to the low level of drilling activity. While these industries performed well in the first quarter of 1986, and had some carry-over of orders into the second quarter, the total current value of shipments for the year declined by 6 percent.

- The downturn in oil and gas investment combined with the lower level construction activity also caused a drop in the shipments of non-metallic minerals products (cement, concrete and gypsum products) in the second half of 1986. Due to the relatively strong first quarter, total shipments for the year were at the same level as 1985.

- The plastic products, electrical products, and the consumer product industries also recorded relatively strong growth in 1986, due to the increase in consumer demand in Alberta, and the continued commercial development of new products and industries within these sectors.

## CONSTRAINTS TO FUTURE GROWTH AND DEVELOPMENT

- Alberta's manufacturing base is less developed compared to most other areas of Canada. In 1986, Alberta manufacturing output accounted for just over 7 percent of the Province's Gross Domestic Product compared with 18.5 percent for Canada as a whole. There are a number of constraints to developing a broader and more diversified economic base in Alberta. Some of the principal constraints are highlighted below.

- Market - Alberta has a relatively small population base plus a resource based economy that is subject to cyclical swings in commodity prices. This makes it difficult for Alberta manufacturers to develop efficient, stable operations strictly on the Alberta market. The small domestic market also creates problems for manufacturers sourcing goods and services from Alberta.

- Transportation - Due to the distance to tidewater and other major markets in Canada and the United States, Alberta manufacturers are faced with higher component transportation costs compared to their competitors. Also, the lack of competition tends to increase the unit cost of transportation.

- Training and Education - There is a lack of management and marketing skills in Alberta as well as technical expertise in manufacturing. Many firms find it difficult to hire sufficient qualified Albertans in specialized areas.

- Industrial Structure - With the exception of the petrochemicals and forest product industries which are export oriented, most manufacturing firms in Alberta are relatively small and immature, making them vulnerable to cyclical changes in the economy. The smaller firms generally have limited financial, management and marketing resources to develop export market opportunities.

- Government Polices, Regulations, and Taxes - Federal government policies, programs and regulations are often considered a constraint to industrial development in Alberta. Examples include the Industrial and Regional Development Program which has provided only limited assistance to Alberta firms; and federal transportation policies which have restricted development of the food processing industry in Alberta (Crow Benefit).

LIST OF MAJOR MANUFACTURING DEVELOPMENT PROJECTS, ALBERTA

March, 1987

| Project Owner | Project Description | Location | Status |
|---|---|---|---|
| Alberta Energy Company/Cominco | Ammonia Plant ($80 million) | Joffre | Construction 85% complete |
| Alberta Gas Ethylene | Ethylene Plant ($400 million) | Joffre | Construction start in 1988 |
| Alberta Gas Ethylene | Hydrogen Purification ($40 million) | Joffre | Construction 85% complete |
| Alberta Gas Ethylene | Pellitizing and Pneumatic Conveying ($50 million) | Joffre | Construction 25% complete |
| CRI Ventures Inc. | Catalyst Regeneration ($4 million) | Medicine Hat | Construction completed |
| Dow Chemical | Ethylene Glycol Expansion ($11 million) | Ft. Saskatchewan | Construction scheduled to start in 1987 |
| LSI Logic Corporation | Microelectronic Chip Reticle Manufacturing Facility ($40 million) | Edmonton | Construction start in Spring 1987 |
| Millar Western Industries Ltd. | Chemi-Thermal Mechanical Pulp Mill ($185 million) | Whitecourt | Construction started late 1986 |
| Peace River Fertilizer Inc. | Ammonia Plant ($15 million) | Peace River | Construction start in Spring 1987 |
| Pellican Spruce Mills | Oriented Strand Board Plant ($55 million) | Drayton Valley | Completed late 1986 |
| Plasti-Fab | Expandable polystyrene ($10 million) | Crossfield | Construction 75% complete |
| Lakeside Packers Ltd. | Meat Packaging Plant Expansion ($6 million) | Brooks | Construction start in 1987 |
| Sun Ice Ltd. | Sportswear Manufacturer Expansion ($4 million) | Calgary | Construction underway |

- Financing - A shortage of local patient equity capital for high risk ventures is still identified as a major problem for new companies starting up in Alberta.

## POLICY RESPONSES

- The Alberta Government has actively promoted growth and diversification by pursuing policies that create a stable investment climate and encourage private sector development. The Alberta Heritage Savings Trust Fund has provided the fiscal capacity to undertake initiatives in the areas of product research and development such as:

  - Food Processing Development Centre
  - Alberta Telecommunications Research Centre
  - Alberta Microelectronic Centre
  - Electronics Test Centre
  - Alberta Laser Institute
  - Product Development Program

  The results of these efforts should become more apparent over the next several years as products are commercially developed in areas where little or no manufacturing previously existed in Alberta.

- Alberta's support for Bilateral Trade Negotiations (BTN) with the United States as well as Multilateral Trade Negotiations (MTN) are key in developing greater export market opportunities for Alberta's manufacturing sector. While trade liberalization, particularly with the United States, may have a negative impact on certain sectors and firms, freer access to the United States and overseas markets is necessary for Alberta to develop a manufacturing sector more competitive in world markets.

- The Alberta Government strongly supports the removal of existing interprovincal trade barriers that restrict trade within Canada. A federal/provincial Task Force was established in 1986 to identify and examine interprovincial barriers. One of the major objectives of the Task Force is to develop a process for the reduction or elimination of these barriers to trade.

- Market Development Activities - The Alberta Government has implemented a number of programs to provide assistance for the development of new export markets and expand existing export sales. Some of the major programs include:

  - Market Development Assistance Program
  - Export Services Support Program
  - Export Loan Guarantee Program
  - International Trade Show Training Program

- Transportation - Alberta Intermodal Services Limited (AIS) was established in 1986 by the Alberta Government. Its purpose is to provide Alberta exporters and importers with low inland transportation costs to and from the West Coast. AIS co-ordinates the movement of containers through the CP Rail system and through private truckers with transport to and from AIS facilities. AIS has marketing offices and storage yards located in Edmonton, Calgary, and Vancouver.

- A new Industrial Diversification Subsidiary Agreement is currently being negotiated between Alberta and the federal government. The objective of this proposed Agreement is to assist in expanding the size and diversity of the province's manufacturing and business services sector. The Agreement will emphasize assistance for private sector efforts to:

  - improve the international competitiveness of Alberta manufactured products and business services;
  - diversify the range of manufactured goods for both export and domestic consumption;
  - diversify the geographic and sectoral range of both domestic and international markets; and
  - foster the growth of new business, enhance the growth of existing business, and promote the development and training of entrepreneurs.

FOOD PROCESSING INDUSTRY

# Current Economic Indicators

## Food Processing Industry

| | 1984 | 1985 | 1986 |
|---|---|---|---|
| Employment[1] | 10,065 | 10,481 | 10,200 |
| Value of Shipments[2] ($ Million) | 3,517 | 3,527 | 3,438 |
| Exports[3] ($ Million) | 297 | 381 | 351 |
| Investment[4] ($ Million) | 108 | 94 | 91 |
| Capacity Utilization[5] (percent) | 79 | 79 | 80 |

1 - Source: Alberta Career Development & Employment
Note: 1986 data have been adjusted by Economic Development & Trade to reflect recent changes in economic trends.

2 - Source: - Statistics Canada, Estimated Value of Goods of Own Manufacture

3 - Source: - Statistics Canada, Commodity Exports

4 - Source: - Statistics Canada, Private and Public Investment in Canada
Note: includes investment in Beverage Industries

5 - These are estimates by Economic Development & Trade based on industry contacts, Statistics Canada national data, and other secondary sources.

# FOOD PROCESSING INDUSTRY

## INDUSTRY PROFILE

- The value of shipments in Alberta's Food Processing Industry was $3.4 billion in 1986. This industry is the largest manufacturing sector in Alberta, in terms of value added or net value of production. Approximately 12,000 people are employed in the Alberta Food Processing Industry.

- The most significant segment of this industry is the meat packing and processing sector which accounted for approximately $1.9 billion or over half of the Alberta Food Processing Industry's total value of shipments in 1985. Other major contributors in the Alberta Food Processing Industry include:

  - dairy operations
  - feed mills
  - canola processors
  - poultry operations
  - vegetable packers/processors
  - flour mills
  - bakeries

- Apart from the major contributors, miscellaneous food processors representing over 100 companies produce an estimated $150 million of annual output. This segment of the industry experienced the fastest rate of growth during the 1970's. Miscellaneous food processors include: dry pasta products, potato chips, biscuits, sugar and chocolate confections.

- The Alberta Food Processing Industry serves mainly domestic markets. International exports represented 5 percent of the total value of shipments in the Alberta Food Processing Industry in 1986. Major exports included:

| | |
|---|---|
| Pork | $ 82 million |
| Canola Oil | $ 72 million |
| Beef and Veal | $ 56 million |
| Canola Oil Cake and Meal | $ 30 million |

- The United States market is the largest export market for Alberta processed foods. Exports to the United States represented 70 percent of the total value of processed food exports shipped from Alberta in 1985.

## RECENT PERFORMANCE

- The value of shipments in the Alberta Food Processing Industry has been estimated to have declined from $3.5 billion in 1985 to $3.4 billion in 1986 - a decrease of 3 percent. This has been attributed to strikes in the meat sector, a decline in the number of cattle slaughtered, lower feed prices and a weak canola oil market which led to temporary plant closures.

- The current performance of the Alberta Beef Industry has been affected by increased competition for cattle available for slaughter. Higher prices for slaughter cattle have reduced the profit margins of local beef processors.

- While the number of local beef packers has declined, the number of packers actually competing for Alberta cattle has increased in the past few years. The Idaho and Washington packers have entered the market in a consistent fashion and this has contributed to increased prices for slaughter cattle.

- Upward pressure on prices for slaughter cattle has also been influenced by a cyclical decline in cattle inventory which has occurred since 1976 as profitability in the breeding sector diminished. The resultant high levels of slaughter, peaking at 1.59 million in 1977, have given way to reduced slaughter cattle output as cattlemen increase retention of female stock. Slaughter in 1986 amounted to 1.14 million head.

- Despite the cyclical decline in local production, the supply of cattle available for slaughter has remained relatively constant. Exports of feeder cattle have declined in response to increased domestic demand. Packers have also been importing cattle from other provinces. However, the overall supply available in the province has not kept pace with demand and this has led to price increases.

- Alberta's two hog packing plants, Gainers and Fletchers, are presently operating near capacity. Both companies have undertaken new investment in plant and equipment to upgrade and expand production capacity. Fletcher's completed a $20 million investment in the fall of 1985. Over the past four years Gainers has invested approximately $4 million in plant and equipment.

- The processed pork market is extremely competitive. Major markets for Gainers and Fletchers include the Western Provinces and the United States Pacific Northwest. While the Alberta plants are considered efficient, United States producers have a competitive advantage with respect to economies of scale, access to mass markets, and lower labour costs. The American producer advantages, however are limited to a smaller number of products. Alberta producers have a greater diversity of product lines, and are widely recognized for their quality products.

- Competitive pressures in the meat packing/processing industry have placed downward pressure on labour costs which has caused considerable labour-management strife. The bitter seven month strike at Gainers in 1986 did not result in a significant wage increase for union members.

- Other sectors in the Alberta Food Processing Industry have experienced steady growth over the past several years. Canola oil production in particular has been a leading force of growth in this industry. Alberta's canola oil shipments have increased from an estimated 200 thousand tonnes in 1979 to over 285 thousand tonnes in 1986. This represents an average annual increase of 5.2 percent for this period.

- The value of canola oil shipments produced in Alberta in 1986 is estimated to be $170 million. This is down sharply from the 1985 high of approximately $250 million. Canola oil prices declined significantly on world markets in 1986 and this led to temporary plant closures in Alberta.

## FACTORS AFFECTING GROWTH AND DEVELOPMENT

- Alberta has a natural comparative advantage with respect to cereal grains, feed grains, oilseeds and livestock. The province also has locational advantages with respect to serving the Western Canadian markets as well as Western USA markets. These are important fundamental factors that will continue to encourage the development of the Food Processing Industry in Alberta.

- It is expected that over the next three years, there will be a significant increase in investment in the meat processing sector. This will follow from an anticipated increase in red meat production as a consequence of the depressed world market for cereal grains and improved returns to the breeding sector.

- Alberta Food Processors have been serving mainly the domestic market. Western Canada's small population base, however limits the growth potential of this industry. As a result, the future growth and development of the Alberta Food Processing Industry is largely contingent upon the development of export markets.

- The United States West Coast and Japan have been identified as markets that have excellent potential for Alberta Food Processors. To be competitive in these markets, Alberta Food Processors will have to be responsive to the needs of consumers. This will involve market research, product innovation, investment in productivity improvements, commitment to quality and value, and aggressive marketing.

- Transportation costs have a major impact on the competitiveness of Alberta Food Processors in export markets. The establishment of Alberta Intermodal Services Ltd. by the Alberta Government has enabled shippers to the West Coast to save as much as 25 to 40 percent on freight costs. The Alberta Government is considering other initiatives that would help to reduce transportation costs to the Pacific Northwest and California.

- Further growth in the Alberta Food Processing Industry has been enhanced with the Canada/Alberta Agricultural Processing and Marketing Agreement. This is a five-year $50 million cost shared agreement (expiring September 30, 1990) between Alberta and the Federal Government. It provides development assistance to encourage investment in the establishment, expansion, and modernization of processing operations, testing and research facilities. Financial assistance is also available for feasibility studies and research and development projects.

- The Alberta Government has also made a significant contribution to technology transfer in this sector through the establishment of the Alberta Food Processing Development Centre. This Centre has product development laboratories that contain equipment and facilities for product formulation, ingredient assessment, packaging systems evaluation, and micro-biological analysis. Pilot plant equipment can provide simulation of industrial production to evaluate product or process performance.

- Federal transportation policies have had a major impact on the development of the Food Processing Industry in Western Canada. While the Western Grain Transportation Act is showing some positive results, its ability to really assist in developing the agricultural sector throughout Canada is being severely restricted because of the method of payment of the Crow Benefit, which has the Federal Government paying directly to the railways. The position of the Government of Alberta is that the Crow Benefit should be paid directly to producers.

- Paying the Crow Benefit directly to producers would eliminate a clear incentive to produce grain for exports. This would result in a broader range of crops being grown in Western Canada and this would assist the development of the Food Processing Industry in Alberta.

- Removing the price distorting effects of the present method of payment would also encourage grain sales to local market users. This would benefit the livestock industry and consequently provide a stimulus for meat packing and processing plants in Alberta.

- Investment in the industrial processing of cereal grains would be encouraged through a revision of the current domestic pricing policy of the Canadian Wheat Board. The Board's control of wheat, oats, barley and their products has resulted in a high domestic flour price. Processors view this as a major competitive barrier in entering the U.S. market.

BEVERAGE INDUSTRY

# Current Economic Indicators

## Beverage Industry

| | 1984 | 1985 | 1986 |
|---|---|---|---|
| Employment[1] | 1,826 | 1,963 | 2,025 |
| Value of Shipments[2] ($ Million) | 303 | 310 | 369 |
| Exports[3] ($ Million) | 25 | 29 | 26 |
| Investment[4] ($ Million) | n/a | n/a | n/a |
| Capacity Utilization[5] (percent) | 70 | 65 | 70 |

1 - Source: Alberta Career Development & Employment
Note: 1986 data have been adjusted by Economic Development & Trade to reflect recent changes in economic trends.

2 - Source: - Statistics Canada, Estimated Value of Goods of Own Manufacture

3 - Source: - Statistics Canada, Commodity Exports

4 - Source: - Statistics Canada, Private and Public Investment in Canada

5 - These are estimates by Economic Development & Trade based on industry contacts, Statistics Canada national data, and other secondary sources.

# BEVERAGE INDUSTRY

## INDUSTRY PROFILE

- The total value of shipments in the Alberta Beverage Industry is estimated to be $369 million for 1986. Employment in the industry during 1986 averaged 1,935 workers.

- The Alberta Beverage Industry consists of four major segments: breweries, wineries, distilleries and soft drink bottlers. The following provides a description of each industry segment.

### Breweries

- In Alberta, there are four national breweries, one regional brewery, and two cottage breweries. The value of shipments in the Alberta Brewing Industry is estimated to be $140 million for 1986. This represents about 38 percent of the total value of shipments in the Alberta Beverage Industry.

- The Canadian Brewing Industry is structured to comply with provincial regulations and policies. Breweries that wish to market their products in a given province must operate a brewery in that province. As a result, there is no interprovincial trade of brewery products.

- The Alberta Brewing Industry consists of relatively small capacity plants. Because of a smaller scale of production and the high cost of packaging material (the glass bottle is dominant), the individual productivity per employee in Canada is approximately one-third that of a United States brewery worker. Furthermore, wage cost per unit of production in Canadian breweries is roughly double that of the United States.

### Wineries

- Alberta's wine industry is composed of 3 wineries which produce approximately 7 million litres annually. Major markets for the Alberta wine industry are in Alberta and the other prairie provinces.

### Distilleries

- Alberta has three distilling companies, two of which are concentrated in brown liquor production, with the production of the other plant split evenly between browns and whites.

- The Alberta distilling industry is competitive internationally with respect to brand acceptance, availability, recognition, and it also has a good reputation for quality. Approximately 90 percent of Alberta whiskey production is exported to the United States, amounting to $27.7 million in 1985.

## Soft Drinks - Non-Alcoholic Beverages

- There are over a dozen producers of non-alcoholic beverages in Alberta. This sector consists of bottled water, soft drinks, fruit juices and other types of non-alcoholic beverages. Several of the producers are franchised bottlers of national brand products. For example, the Gray Beverage (Alberta) Ltd. plant in Edmonton is a franchised bottler of Pepsi and 7-Up products and also bottles Crush, Hires, Pure Spring and Dr. Pepper.

- Transportation costs limit most producers to market their products within Alberta. However, some producers have been able to develop markets in Western Canada as well as the United States. Collectively, the value of shipments of the non-alcoholic beverage industry in Alberta represents about 40 percent of the total value of shipments in the province's beverage industry.

## RECENT PERFORMANCE

- In 1986, the value of shipments in the Alberta Beverage Industry experienced a 19 percent increase over 1985 levels of activity. This has been attributed to the lengthy strikes which occured in the brewing industry during the summer of 1985.

- Perennial strikes in the Alberta Brewing Industry has resulted in consumer tastes shifting to imports of American beer. In 1986, United States beer (excluding beer brewed in Alberta under a licensing agreement) accounted for approximately 6 percent of the Alberta market.

- Recently there have been accusations by representatives of the Alberta Brewing Industry that Washington State breweries are dumping their beverages in Canada. These representatives stated that the ALCB is paying less for brands such as Rainier and Olympia than Washington State distibutors. One dozen beer made in the United States sells for up to $2 (Canadian) less than one dozen made in Canada. This price differential includes the ALCB's 15 percent import surcharge to cover handling and storage costs.

- Alberta breweries have been lobbying federal authorities for relief. However, industry officials have indicated that it may be difficult to prove injury because of the number of strikes and lockouts that have occured at Alberta breweries over the past few years.

- The Alberta Beverage Industry has been operating below capacity. In particular, capacity utilization of Alberta distillers is less than 50 percent. This has been attributed to declining per capita consumption and higher product prices as a result of annual increases in federal and provincial taxes.

- Per capita consumption of beer has also declined with no renewed growth expected in the near future. Rising prices, demographic factors (ie. aging baby boom), and changing drinking habits have contributed to this trend. Only the wine industry has experienced steady increases in the per capita consumption of its products in the past few years.

## FACTORS AFFECTING FUTURE GROWTH AND DEVELOPMENT

- The future growth of the Alberta Alcoholic Beverages Industry will largely be contingent upon demographic factors and changing consumer tastes. However, it is generally expected that a comprehensive free trade arrangement with the United States would result in significant rationalization within the Canadian Brewing Industry.

- Brewing Industry representatives have stated that extensive plant closures would occur across the country under a free trade agreement. Only the large scale producers in Toronto and Montreal would be competitive with United States breweries. Minimum plant size in the United States is 20 million barrels per year, which is equivalent to the entire Canadian market.

- Alberta producers of non-alcoholic beverages are anticipated to experience stable growth in the near term. Demand is largely a function of demographic factors such as population growth and age. Alberta has a relatively young population base and this has contributed to the province having the highest per capita consumption of soft drinks in Canada (approximately 80 litres per capita in 1985).

- A major concern for the industry is the current bilateral Free Trade Negotiations with the United States. Both breweries and wineries anticipate industry rationalization as a result of a free trade agreement with the United States. While a free trade agreement is supported by the distilleries, they have indicated that short term assistance will be necessary as the industry adjusts to new competitive pressures.

# METALS AND MACHINERY

# Current Economic Indicators

## Primary Metals Industry

| | 1984 | 1985 | 1986 |
|---|---|---|---|
| Employment[1] | 2,351 | 2,568 | 2,215 |
| Value of Shipments[2] ($ Million) | 680 | 750 | 644 |
| Exports[3] ($ Million) | 85 | 93 | 54 |
| Investment[4] ($ Million) | 46 | 48 | 75 |
| Capacity Utilization[5] (percent) | 55 | 60 | 50 |

## Fabricated Metal Products Industry

| | 1984 | 1985 | 1986 |
|---|---|---|---|
| Employment[1] | 8,607 | 10,779 | 11,500 |
| Value of Shipments[2] ($ Million) | 604 | 685 | 752 |
| Exports[3] ($ Million) | 14 | 14 | 17 |
| Investment[4] ($ Million) | 32 | 20 | 12 |
| Capacity Utilization[5] (percent) | 55 | 60 | 65 |

# METALS AND MACHINERY

## INDUSTRY PROFILE

- The metals and machinery sector consists of three major industry groups - Primary Metal Industries, Fabricated Metal Product Industries, and Machinery Industries. In Alberta, all three industry groups are highly dependent on the oil and gas industry.

### Primary Metals Industry

- The primary metal industry includes establishments such as iron and steel mills, steel pipe and tube mills, iron foundaries, plus primary manufacturers of non-ferrous metals (eg. aluminum, copper, nickel, etc.). There are no fully integrated mills in Alberta, as most companies produce metal from scrap, and/or are involved in casting, rolling and extruding metal into primary shapes (eg. steel pipe).

- Aside from Sherritt Gordon Mines which is involved in the refining of nickel and nickel alloys, there are no other Alberta companies involved in the primary manufacturing of non-ferrous metals.

- The principal primary metal products manufactured in Alberta include the "oil country tubular goods" (pipeline, well casing and drill pipe) used directly by the oil and gas industry, and primary shape steel (eg. rods, sheet, strip, castings and structural shapes) to supply the metal fabricating industries for further upgrading.

- The primary iron and steel industry in Alberta is made up of a relatively small number of firms (less than 25 establishments). The major firms in Alberta - Stelco Inc., IPSCO, Western Canada Steel, and Prudential Steel Ltd. - account for most of the output in this sector. These firms are also involved to some extent in the manufacturing of fabricated metal products.

### Fabricated Metals Industry

- The fabricated metals industry is comprised of some 450 establishments, most of which are relatively small scale labour intensive operations. While this sector accounted for less than 5 percent of the total value of Alberta manufacturing shipments in 1986, it contained nearly 13 percent of the province's manufacturing employment.

- The largest proportion of shipments are used in the oil and gas industry, however products are also supplied to the mining, forestry and construction industries in Alberta and Western Canada. Exports to the U.S. and overseas markets are negligible (less than 3 percent of shipments in 1986).

- Product areas in this sector include metal tanks and pressure vessels, stamped, pressed and coated metal products, prefabricated metal buildings, machine shops, metal valves, fabricated structural products, wire products, and heating equipment.

# Current Economic Indicators

## Machinery Industry

| | 1984 | 1985 | 1986 |
|---|---|---|---|
| Employment[1] | 5,916 | 7,481 | 6,100 |
| Value of Shipments[2] ($ Million) | 557 | 646 | 566 |
| Exports[3] ($ Million) | 168 | 171 | 139 |
| Investment[4] ($ Million) | 21 | 26 | 25 |
| Capacity Utilization[5] (percent) | 55 | 65 | 55 |

1 - Source: Alberta Career Development & Employment
Note: 1986 data have been adjusted by Economic Development & Trade to reflect recent changes in economic trends.

2 - Source: - Statistics Canada, Estimated Value of Goods of Own Manufacture

3 - Source: - Statistics Canada, Commodity Exports

4 - Source: - Statistics Canada, Private and Public Investment in Canada

5 - These are estimates by Economic Development & Trade based on industry contacts, Statistics Canada national data, and other secondary sources.

## Machinery Industry

- The machinery industry consists of two major components:

  1. industrial machinery manufacturers (primarily oil and gasfield equipment);
  2. agricultural implement manufacturers.

- Manufacturers of oilfield exploration and drilling equipment, and production equipment account for approximately 80 percent of the value of output in the machinery sector. Roughly one-third of these shipments are exported to the U.S. and overseas markets.

- The balance of output in this sector consists of agricultural implements (just under 10 percent of shipments in 1986) plus other miscellaneous machinery and equipment manufacturers.

## RECENT PERFORMANCE

- With the high level of dependency on the oil and gas industry, the metal and machinery manufacturers have been faced with a very volatile market over the past five years.

- Total value of shipments in these three industry groups declined 19 percent between 1981 and 1984, when oil and gas investment activity was adversely affected by the imposition of the National Energy Program. In 1985, total value of shipments increased by 13 percent, corresponding with the recovery in oil exploration activity.

- The strong growth in shipments continued in the first part of 1986, until the collapse in oil prices brought about sharp cuts in oil and gas activity. Petroleum industry investment declined by more than 30 percent in 1986.

- The current market situation has forced most oil and gasfield equipment manufacturers to reduce employment levels and cancel plans for capital expenditures. Most of these businesses have experienced a sharp decline in demand, with revenues falling by an estimated 35 to 50 percent in the second half of 1986.

- With demand for oil and gasfield equipment at extremely low levels, there is an excess supply of inventories, and considerable amount of excess capacity. Most plants operated well below 50 percent capacity in the second half of 1986.

- Despite the dramatic drop in oil and gas capital investment in 1986, revenues from the metal and machinery industries were down only 5.7 percent last year compared to 1985. This can be attributed to the strong demand in the first quarter of 1986, and the carry-over of orders into the second and third quarters.

- There also has been a move towards greater diversification into non-oil field products, particularly in the metal fabricating industries, which also supply the forestry and mining industries, and the construction sector. To date, the extent of this activity has been hard to quantify.

- Shipments in the fabricated metal industries increased by 10 percent in 1986 due to a strong first half performance, while primary metals declined by 14 percent, and machinery industries dropped by 12 percent.

- Exports of primary metal products (mainly oil country tubular goods), fell by nearly 50 percent (42 million) in 1986. This was primarily due to the imposition of anti-dumping and countervail duties by the U.S. on Canadian imports of oil country tubular goods in 1986, plus the decline in the U.S. oil and gas activity.

- Machinery industry exports (mostly oil and gasfield equipment) accounted for more than one quarter of the value of shipments in this sector. Unlike the primary metals industry where all exports are destined to the U.S., most of the oilfield equipment is shipped to overseas markets such as the USSR, Pacific Rim countries, United Kingdom, Norway, India and the Middle East.

- The balance of machinery industry exports in 1986 consisted of agricultural implement sales to the U.S. With the poor performance of the agriculture sector, sales to the U.S. fell sharply in 1986. In total, machinery industry exports declined 13 percent last year.

## FACTORS AFFECTING FUTURE GROWTH AND DEVELOPMENT

- The U.S. countervailing/anti-dumping duty action (July 22, 1986) on oil country tubular goods imported from Canada, severely limited Alberta sales (IPSCO Inc.) to the U.S. The U.S. International Trade Commission ruled that imports from Canada had "materially injured" U.S. producers. Accordingly, IPSCO is now subject to 40.85 percent margin of dumping on these products.

- While many firms are looking for new market opportunities in an attempt to diversify the product lines, the oil and gas sector will continue to be the major market for most machinery and metal industries in Alberta.

- Future oil prices will be the major determining factor in the level of new oil and gas investment, and thus the demand for products supplied by the related oil and gasfield machinery and equipment manufacturers.

- Alberta has a highly competitive oil and gasfield equipment industry as is indicated by the relatively high value of exports, not only to the U.S. but to more than 30 other countries around the world.

- There is considerable opportunity to further develop overseas export markets for oil and gasfield equipment. Alberta's expertise in manufacturing specialized equipment for the petroleum industry is becoming more widely recognized in the international marketplace.

- A bilateral free trade agreement with the U.S. would increase the volume of trade between the U.S. and Alberta in oil and gasfield equipment. While the trade flow patterns may change significantly under free trade, the U.S. would likely continue to maintain a trade surplus in this sector.

# CHEMICALS INDUSTRY

# Current Economic Indicators

## Chemicals and Chemical Products Industry

| | 1984 | 1985 | 1986 |
|---|---|---|---|
| Employment[1] | 5,540 | 6,080 | 6,100 |
| Value of Shipments[2] ($ Million) | 1,949 | 2,049 | 1,996 |
| Exports[3] ($ Million) | 810 | 1,040 | 995 |
| Investment[4] ($ Million) | 464 | 284 | 436 |
| Capacity Utilization[5] (percent) | 70 | 78 | 80 |

1 - Source: - Alberta Career Development & Employment
Note: 1986 data have been adjusted by Economic Development & Trade to reflect recent changes in economic trends.

2 - Source: - Statistics Canada, Estimated Value of Goods of Own Manufacture

3 - Source: - Statistics Canada, Commodity Exports

4 - Source: - Statistics Canada, Private and Public Investment in Canada

5 - These are estimates by Economic Development & Trade based on industry contacts, Statistics Canada national data, and other secondary sources.

# CHEMICALS INDUSTRY

## INDUSTRY PROFILE

### Petrochemicals/Chemical Fertilizers

- Alberta's natural gas based petrochemical industry accounts for more than 80 percent of the total value of chemical production in the Province. The petrochemical industry consists of three major segments:

  1. ethane-based industry (ethylene and ethylene derivatives)
  2. methanol and methanol derivatives
  3. ammonia and ammonia derivatives (mostly fertilizers)

  Benzene (derived from crude oil) is also produced in Alberta by Shell Canada (Scotford).

- Since the mid-1970's, nearly $5 billion has been invested in Alberta in the development of a modern, world-scale petrochemical industry.

- There are a total of 15 major petrochemical and chemical fertilizer producers in Alberta. Alberta accounts for approximately 50 percent of the petrochemical plant capacity in Canada.

- Canadian production far exceeds domestic demand, therefore, Alberta based producers must capitalize on export opportunities in the Western United States and the Pacific Rim. In 1986, more than half the total value of production was sold outside of Canada.

- With the exception of Novacor Chemicals, the petrochemical producers are all Canadian subsidiaries of multinational corporations (eg. Celanese, CIL, Union Carbide, B.F. Goodrich, Shell Canada, Dow Chemical, etc.).

### Inorganic/Specialty Chemicals

- The balance of chemical production in Alberta consists mainly of inorganic chemicals to supply major industries such as pulp and paper, mining (including oil and gas) and petroleum refining. Principal commodity chemicals produced in Alberta include caustic soda, chlorine, sulphuric acid, hydrochloric acid, hydrogen sulphide, carbon dioxide, and carbon block.

- The principal markets for the inorganic chemicals are the resource-based industries in Western Canada. Some organic chemicals find markets outside of Canada, as exports in 1986 accounted for approximately 10-15 percent of total Alberta production.

- There is some limited production of specialty chemicals in Alberta used as additives or process chemicals in the exploration and production of oil and gas, and in the manufacture of consumer products such as soap and cleaning compounds, and paint products. Most of the specialty chemical producers and formulators have relatively small plant capacity, and total output in 1986 accounted for less than 5 percent of the value of chemical shipments.

## RECENT PERFORMANCE

- Petrochemicals are sold in very competitive global markets. In the past 3 to 4 years, the industry has been characterized by oversupply, low product prices, and overall poor financial performance, although margins in the past six months have improved.

- The Alberta ethylene-based industry, which is largely export oriented, has seen its competitive advantage eroded with the decline in relative energy prices. Much of the U.S. Gulf Coast ethylene production (Alberta's major competitor) has the flexibility to switch to crude oil feedstocks. While capacity utilization of Alberta plants has remained relatively high, the financial returns have been poor.

- The methanol industry is faced with a large oversupply worldwide. The capacity of Alberta's two methanol producers (Celanese Canada and Alberta Gas Chemicals) far exceeds total Canadian demand, therefore, most of the output must be sold in the world market. During 1986, these producers operated at only about 50 to 60 percent capacity. Methanol prices have dropped more than 35 percent in the past two years.

- The ammonia-based fertilizer industry, with its substantial domestic demand base, has fared much better in recent years than the other petrochemical sectors. However, both domestic demand and exports have declined in recent months due to the poor agriculture performance. Prices dropped by as much as 20 percent in the second half on 1986.

- Inorganic chemical suppliers to pulp and paper industry (eg. caustic soda, sulphur dioxide, chlorine) experienced a strong demand for their products in 1986, as mill production reached record levels. Despite sharp increases in demand, prices for most chemicals remained relatively flat.

- Other inorganic/specialty chemical producers associated with mining, oil and gas, experienced a decline in demand in 1986.

## FACTORS AFFECTING FUTURE DEVELOPMENT AND GROWTH

- Alberta has a number of comparative advantages for the petrochemical industry that attracted massive investment in the 1970's and will probably continue to attract any future expansions of the Canadian petrochemical industry. These include:

  - abundant supply of natural gas;
  - relatively inexpensive feedstock due to the high ethane content of our natural gas, and low transportation costs;
  - proximity to markets in the U.S. West Coast and Pacific Rim;
  - favourable exchange rate with U.S.; and
  - good labour relations and supportive government environment.

- Deregulation of the natural gas industry and the ethane feedstock pricing system will ensure that ethane prices will be market responsive with feedstock prices in the U.S. Gulf Coast.

- The lack of a large captive domestic market, high tariffs on most petrochemicals, particularly in the U.S., and high inland transportation costs are all factors that have affected the performance of the petrochemical industry in Alberta.

- The existing industry must export a large proportion of the production. New projects will have to be justified on export markets.

- Given the dependence of the Alberta petrochemical industry on trade, Bilateral Trade Negotiations with the United States are a priority issue for both industry and the Alberta Government. The industry would realize significant benefits from a Trade Agreement, as U.S. tariffs for most ethylene derivatives are in the range of 9 to 12 percent, while methanol is assessed a tariff of 18 percent. NOTE: Ammonia based products can be exported duty free to the U.S. if used as fertilizer.

- Rail freight rates and capacities for moving petrochemicals to tidewater have been an issue with industry as they represent a significant cost in shipping petrochemicals to the Pacific Rim.

FOREST PRODUCTS INDUSTRY

# Current Economic Indicators

## Forest Products Industry

| | 1984 | 1985 | 1986 |
|---|---|---|---|
| Employment[1] | 9,216 | 9,590 | 10,100 |
| Value of Shipments[2] ($ Million) | 933 | 940 | 1,083 |
| Exports[3] ($ Million) | 524 | 513 | 543 |
| Investment[4] ($ Million) | 80 | 117 | 121 |
| Capacity Utilization[5] (percent) | 75 | 82 | 90 |

Note: Figures on employment and value of shipments include secondary processing of forest products (e.g. sash, door and other millworks; cabinets, wooden door and window industry) which account for roughly 20 percent of employment and value of shipments.

1 - Source: Alberta Career Development & Employment
Note: 1986 data have been adjusted by Economic Development & Trade to reflect recent changes in economic trends.

2 - Source: - Statistics Canada, Estimated Value of Goods of Own Manufacture

3 - Source: - Statistics Canada, Commodity Exports

4 - Source: - Statistics Canada, Private and Public Investment in Canada

5 - These are estimates by Economic Development & Trade based on industry contacts, Statistics Canada national data, and other secondary sources.

# FOREST PRODUCTS INDUSTRY

## INDUSTRY PROFILE

- The Alberta lumber industry consists of two dozen major sawmills, producing more than 1.4 billion board feet of lumber a year and more than one million cubic metres of wood chips. Another 300 small sawmills operate on a part time basis and produce less than 100 million board feet annually, primarily for farm and local use.

- Other large scale operations in Alberta's primary forest products industry include: two major bleached kraft pulp mills, three plywood mills, three oriented strand board (OSB) plants and Canada's first medium density fibre board plant. Alberta does not have any major paper mill operations.

- In addition to the above facilities, there are also 18 wood treating plants, producing some 200,000 cubic metres of treated wood products, mostly fence posts.

- The value of the above primary forest products exceeded $700 million in 1986, and directly employed approximately 7,000 workers.

- Most of the pulp production and oriented strand board output are marketed in the United States. More than 70 percent of Alberta's lumber output is also exported to the United States, while plywood production is limited primarily to the domestic market in the Prairie Provinces and Eastern Canada. The high United States tariff (20 percent ad valorem) restricts plywood exports to the United States.

## RECENT PERFORMANCE

- In 1986, the softwood lumber industry in Alberta experienced a record year in terms of production and sales despite the threat of U.S. countervail duty action. The 1986 average lumber price rose 20 percent compared to 1985, while total production increased by 9 percent to more than 1.3 billion board feet as most sawmills operated at or near full capacity. Exports values rose by 14 percent to $192 million, approximately 70 percent of the total value of shipments.

- On December 30, 1986, the Governments of Canada and the United States were able to reach a negotiated settlement on the softwood lumber issue. Under the terms of the agreement, Canada imposed a 15 percent tax on softwood lumber shipments to the United States, effective January 8, 1987.

- The impact of the 15 percent export tax on Alberta lumber exports will depend upon the demand and price for lumber in the U.S. However, it is likely the competitiveness of Alberta sawmills will be adversely affected to some extent, resulting in lower volumes and/or margins on export sales to the U.S.

- Bleached kraft pulp prices have also approached record levels, rising some 15 percent in Canadian funds in the second half of 1986. Both pulp mills in Alberta are operating at full capacity. Almost all pulp production is marketed outside of Canada. The total value of exports in 1986 amounted to more than $290 million.

- Production of oriented strandboard (OSB), a reconstituted structural board, has grown rapidly over the past two years. OSB has been successfully marketed in the U.S., replacing traditional plywood markets. Weldwood Canada Ltd. in Slave Lake recently converted from the production of waferboard to OSB. Pelican Spruce Mills Ltd. which built the first OSB mill in Canada, started up a second mill in Drayton Valley in late 1986.

- Pulp and OSB production are not affected by the 15 percent export tax on softwood lumber.

- Alberta Energy Company successfully opened the first medium density fibreboard plant in Canada. The company has indicated that some of this production will go to offshore and U.S. markets.

## FACTORS AFFECTING FUTURE GROWTH AND DEVELOPMENT

- Alberta has the potential timber resources to expand its forest products industry. Less than 60 percent of the allowable cut for softwood, and only about 25 percent of the allowable cut for hardwood are currently committed for industrial use in the province.

- Transportation Infrastructure - most of the softwood timber resources that remain available for development are located in northern Alberta, and are largely inaccessible. If any significant development is to occur, new transportation infrastructure will be required to provide access from the resource to the mill and from the mill to the market.

- Freight Rates - Alberta forest products are mainly sold in distant North American markets, and Alberta producers pay among the highest freight rates in Canada. The high transportation costs are a factor in the development of new projects in Alberta which must compete with the much larger B.C. forest industry.

- Applied Research - The Canada/Alberta Forest Resource Development Agreement, implemented in 1985, provides a means for increasing the level of support for research and development in the forest industry, particularly relating to the utilization of the large aspen supplies in the province.

- The Forest Industry Development Division was established within Alberta Forestry, Lands and Wildlife in 1985 to encourage industry expansion and modernization. This is an important component in the Province's industrial diversification strategy.

# REFINED PETROLEUM PRODUCTS

# Current Economic Indicators

## Refined Petroleum Products

| | 1984 | 1985 | 1986 |
|---|---|---|---|
| Employment[1] | 2,900 | 3,900 | 4,100 |
| Value of Shipments[2] ($ Million) | 4,341 | 5,151 | 4,481 |
| Exports[3] ($ Million) | 445 | 330 | 125 |
| Investment[4] ($ Million) | 201 | 105 | 126 |
| Capacity Utilization[5] (percent) | 89 | 82 | 82 |

1 - Source: - Statistics Canada, Survey of Employment Payroll

2 - Source: - Statistics Canada, Estimated Value of Goods of Own Manufacture

3 - Source: - Statistics Canada, Commodity Exports

4 - Source: - Statistics Canada, Private and Public Investment in Canada

5 - These are estimates by Economic Development & Trade based on industry contacts, Statistics Canada national data, and other secondary sources.

# REFINED PETROLEUM PRODUCTS

## INDUSTRY PROFILE

- The petroleum products industry in Alberta consists of six refiners operating a total of seven plants. Two refiners, Esso Petroleum and Petro-Canada, control just under three-quarters of Alberta's total capacity.

- Alberta refiners which supply most of the Western Canadian market (particularly the Prairie Region), make up 20 percent of the total refining capacity in Canada.

- In 1986, the petroleum refining industry accounted for nearly 30 percent of the total value of manufacturing shipments in Alberta. However, on a value added basis (value of shipments less cost of materials and supplies used), the industry contributed only 8 percent to the total value added output of the Alberta manufacturing sector, and less than 5 percent of the total manufacturing employment.

- Export market opportunities are limited, as petroleum product shipments to the U.S., mainly Montana, averaged 4,500 barrels/day in the first half of 1986, less than 2 percent of the total refinery production in Alberta. While aided by the low value of the Canadian dollar, it is difficult for Alberta to compete with the U.S. refining industry.

- Just under 80 percent of Western Canadian petroleum product demand is for transportation fuels (motor gasoline, diesel fuel, aviation fuel). Light and heavy fuel oils account for less than 5 percent of total refined product demand. In comparison, Eastern Canada still has significant demand for fuel oils - 10.8 percent of total product demand in Ontario, and 26.5 percent in Quebec and Atlantic Canada in 1985.

- The balance of refined petroleum production in Alberta includes asphalt, refined propane and butane, petrochemical feedstock, kerosene, lubricants and other miscellaneous products.

## RECENT PERFORMANCE

- Substantial rationalization has occured in the Canadian refining industry since 1980 due to declining product demand and low profitability. Western Canadian demand fell by approximately 15 percent between 1980 and 1985, while demand last year stayed at the same level as 1985.

- A total of ten refineries have shut-down across Canada since 1980, two of which were located in Alberta - Gulf Canada (December, 1983) and Texaco Canada (June, 1984).

- The closures in Alberta, however, have been more than offset by the addition of the Shell Scotford refinery (September 1984), which has a crude capacity of 50,000 barrels/day, and the Turbo Resources Refinery (October 1982) with a crude capacity of 28,000 barrels/day.

- Despite the 15 percent decline in Western Canadian product demand between 1980 and 1985, Alberta refinery output has managed to steadily increase by capturing a larger share of the Western Canadian market. This has resulted in a significant improvement in the capacity utilization of Alberta plants.

- Exports to the U.S. have dropped off sharply due to increased competition from U.S. refiners. The industry in the U.S. has been faced with overcapacity problems similar to Canada.

- Total Alberta refinery production in 1986 is estimated to be at the same level as 1985. However, the value of shipments last year declined by approximately 13 percent due to lower prices.

- While petroleum product prices dropped by as much as 25 to 35 percent in the second half of 1986, refiner margins improved significantly due to an even greater decline in crude petroleum prices. For example, the average Edmonton posted price for crude oil in October of 1986 was $19.74/barrel (Cdn.) compared to $37.43/barrel (Cdn.) in October 1985, a drop of more than 47 percent.

## FACTORS AFFECTING FUTURE GROWTH AND DEVELOPMENT

- Further rationalization is unlikely in Western Canada as the capacity utilization rate is now above 80 percent for Western Canadian refineries.

- No additional refinery capacity is likely to be built in Alberta until the 1990's, as future growth in demand will be limited by improved transportation fuel efficiency. Any new capacity additions will likely be in the form of expansion at existing plants to upgrade increasing supplies of heavy crude oil blends.

- In order to comply with changes in federal regulations to reduce the level of lead in gasoline (effective January 1, 1987), refiners have had to make major investments in new catlytic crackers and catalysts. The various changes made in the refining industry have increased the cost of refining leaded gasoline.

- The outcome of current bilateral free trade negotiations between U.S. and Canada will have little impact on trade in petroleum products, as most products are currently free to move between the two countries.

## ALBERTA REFINERY CAPACITIES - 1986

| Refinery | Location | Crude Capacity b/cd | Capacity $M^3/cd$ |
|---|---|---|---|
| Esso Petroleum | Edmonton | 165,500 | 26,300 |
| Husky Oil | Lloydminster | 23,540 | 3,740 |
| Petro-Canada | Edmonton | 121,140 | 19,250 |
| Shell Canada | Scotford | 50,340 | 8,000 |
| Shell Canada | Bowden | 5,030 | 800 |
| Turbo Resources | Calgary | 27,630 | 4,390 |
| Total Alberta | | 393,180 | 62,480 |
| Total Canadian | | 1,952,200 | 310,220 |

b/cd - barrels per calendar day
$M^3/cd$ - cubic metres per calendar day

Source: Oilweek

# NON-METALLIC MINERAL PRODUCTS

# Current Economic Indicators

## Non-Metallic Mineral Products

| | 1984 | 1985 | 1986 |
|---|---|---|---|
| Employment[1] | 4,017 | 4,319 | 4,300 |
| Value of Shipments[2] ($ Million) | 514 | 567 | 571 |
| Exports[3] ($ Million) | 23 | 20 | 25 |
| Investment[4] ($ Million) | 47 | 49 | 50 |
| Capacity Utilization[5] (percent) | 50 | 55 | 55 |

1 - Source: Alberta Career Development & Employment
Note: 1986 data have been adjusted by Economic Development & Trade to reflect recent changes in economic trends.

2 - Source: - Statistics Canada, Estimated Value of Goods of Own Manufacture

3 - Source: - Statistics Canada, Commodity Exports

4 - Source: - Statistics Canada, Private and Public Investment in Canada

5 - These are estimates by Economic Development & Trade based on industry contacts, Statistics Canada national data, and other secondary sources.

# NON-METALLIC MINERAL PRODUCTS

## INDUSTRY PROFILE

- The principal products manufactured in Alberta in this industry group include: cement, ready-mix concrete and concrete products, gypsum products, plus glass and clay products.

- Cement and cement product industries (ready-mix concrete, precaste concrete and other concrete products) account for approximately 60 percent of the total value of Alberta shipments of non-metallic mineral products.

- Most of the industries within this sector are designed to serve the local market in Alberta, and to a lesser extent the Western Canadian market.

- Export market opportunities are fairly limited, particularly for cement and cement products, given the high transportation costs in relation to the value of the products. Total exports in 1986 accounted for only 4 percent of total value of shipments of the non-metallic mineral industries. Principal commodities exported last year included refractory products (eg. brick), gypsum and glass products.

## RECENT PERFORMANCE

- Most of the non-metallic product operations in Alberta are closely tied to the construction industry. Given that construction activity in Alberta dropped by some 35 percent between 1981 and 1984, the sector has suffered serious over-supply problems and low capacity utilization rates.

- The recovery in total construction expenditures in Alberta in 1985 was short-lived as the collapse of oil prices resulted in a downturn in housing starts and other construction expenditures in the second half of 1986. Total construction expenditures in 1986 were estimated to be 15 percent lower than 1985, dropping back to levels comparable to 1984.

- Most of the construction associated with the 1988 Winter Olympics has been completed or near completion which has further contributed to the decline in demand in the second half of 1986.

- The cement industry in Alberta (Canada Cement Lafarge, Genstar) operated at only 50 percent capacity utilization in 1986. Most concrete product plants are operating at similar capacity levels. The two Alberta-based cement manufacturers are also facing possible incursion into the Alberta market by cement manufacturers from Montana.

# ELECTRICAL PRODUCTS INDUSTRY

# Current Economic Indicators

## Electrical Products Industry

| | 1984 | 1985 | 1986 |
|---|---|---|---|
| Employment[1] | 3,275 | 3,600 | 4,000 |
| Value of Shipments[2] ($ Million) | 228 | 244 | 260 |
| Exports[3] ($ Million) | 40 | 64 | 79 |
| Capacity Utilization[4] (percent) | 68 | 71 | 65 |

1 - Source: Estimated by Economic Development & Trade

2 - Source: 1984 - Statistics Canada, Manufacturing Industries of Canada: National and Provincial Areas
1985-86 - Estimated by Economic Development & Trade

3 - Source: Statistics Canada, Commodity Exports

4 - These are estimates by Economic Development & Trade based on industry contacts, Statistics Canada national data, and other secondary sources.

# ELECTRICAL PRODUCTS INDUSTRY

## INDUSTRY PROFILE

- o Alberta's electrical products industry is composed of the following product groups:

  - telecommunication equipment
  - electronic equipment and components
  - computing equipment
  - instruments and process control products
  - transportation electronics

  (NOTE: Electronic manufacturing does not include the software and computer service industry.)

- o The total value of shipments in the Alberta Electrical Products Industry has been estimated to be $260 million in 1986. This represented 1.7 percent of total manufacturing shipments in Alberta.

- o Employment in this industry has been estimated to be approximately 4000 workers. The largest manufacturer is Northern Telecom Canada Ltd. This company has three manufacturing plants in Calgary which employ a total of 2500 people.

- o There are about 120 firms in Alberta that manufacture electrical products. This industry is recognized for its strengths in oilfield electronics, telecommunications equipment, office automation equipment, supervisory control, data acquisition systems, and thermoelectric power generators.

- o In 1986, Alberta exports of electrical products were valued at approximately $75 million. This represented about 28 percent of the total value of shipments in this industry. Major exports included:

| | |
|---|---|
| Telecommunication Equipment | - $28.5 million |
| Computer Hardware | - $33.8 million |
| Electronic Equipment Components | - $ 3.7 million |

- o Exports of electrical products shipped to the United States totaled $67.5 million in 1986. This represented about 90 percent of the total value of exports of Alberta electrical products exports.

## RECENT PERFORMANCE

- o The majority of the companies in the Alberta Electrical Products Industry manufacture instrumentation and process control products. The major markets for these products are the petrochemical, oil and gas industries. As a result of the downturn in the energy sector, this segment of the Electrical Products Industry has experienced sluggish growth over the past year.

- The telecommunications segment represents an estimated 75 percent of the total value of shipments in the Alberta Electrical Products Industry. Over the past few years, this segment of the industry has experienced steady growth. Much of this growth has been led by technological change in the private sector with respect to upgrading telecommunication equipment. Export sales of Novatel's cellular telephones and Northern Telecom's digital switching systems have also been key components of growth.

- Alberta Electrical Product companies have been gaining wide recognition for their innovative products. General Systems Research (GSR), for example has pioneered laser technology for industrial fabric cutting. This system was installed at a General Motors plant in Windsor, Ontario in 1986. Recently, GSR unveiled a new system that would use lasers to treat metal and ceramic surfaces. The company has applied for a U.S. patent for this technology.

- A major set-back incurred by the Electrical Products Industry in 1986 was the decision of Bell-Northern Research (BNR) to close its research laboratory in Edmonton and colsolidate it with BNR facilities in Ottawa. This laboratory was involved with research concerning fibre-optics, opto-electronics and fibre-link technology. The closure of this laboratory resulted in the loss of 150 jobs, many of which were transferred to Ottawa.

## FACTORS AFFECTING FUTURE GROWTH AND DEVELOPMENT

- There is a high degree of optimism concerning the future growth prospects of the Electrical Products Industry. Rapid technological development continues to create new product and market opportunities. Industry segments that have been identified as having strong growth potential in Alberta include manufacturers of integrated circuits and semi-conductors, agricultural communication, cellular radios, and medical products such as digital heart rate monitors and alarm units, ultra-sonic stethoscopes.

- The greatest problem faced by electronics manufacturers appears to be in obtaining the capital required for new equipment and research and development. As most electronic firms are small and electronics is considered by most financial institutions to be of high risk, securing funds often proves difficult.

- The SPURT Investment Fund I is a joint private/public sector initiative that was formed in October 1985 to provide equity investments in seed and early-stage technology enterprises. In addition to seed capital, the SPURT Investment Fund also provides financial, management, engineering and marketing resources. In January of 1987, the Alberta Government announced its participation in the Fund with an investment of $500,000 during the 1986/87 fiscal year with the provision for additional funding of $500,000 for three successive years.

- Over the past five years, the Alberta Government has undertaken several major initiatives that have formed a significant infrastructure that will support the future development of the Alberta Electrical Products Industry. These initiatives include:

  - Alberta Microelectronics Centre/Microchip Design and Fabrication Facilities
  - Electronics Test Centre
  - Electronics Industry Information Centre
  - Telecommunications Research Centre
  - Alberta Laser Institute

- In 1986, the Alberta Government signed a $20 million technology transfer agreement with LSI Logic. This has given Alberta universities access to advanced microelectronic technology that has been developed by LSI.

- The removal of duties on imports of U.S. integrated circuits in the Federal Budget on February 18, 1987, was favourably received by the industry. The import duties had been placed on several U.S. imports in response to the 35 percent U.S. tariff placed on Canadian exports of shakes and shingles in May 1986. The Canadian import duty, however increased the manufacturing costs of electrical producers and adversely affected their competitiveness. The tariffs represented a $30 million increase in the cost of doing business for Canadian electrical product manufacturers.

PLASTIC PRODUCTS INDUSTRY

# Current Economic Indicators

## Plastic Products Industry

| | 1984 | 1985 | 1986 |
|---|---|---|---|
| Employment[1] | 2,405 | 2,785 | 2,937 |
| Value of Shipments[2] ($ Million) | 178 | 205 | 225 |
| Exports[3] ($ Million) | 12 | 15 | 16 |
| Investment[4] ($ Million) | n/a | n/a | n/a |
| Capacity Utilization[5] (percent) | 80 | 85 | 85 |

1 - Source: Alberta Career Development & Employment
Note: 1986 data have been adjusted by Economic Development & Trade to reflect recent changes in economic trends.

2 - Source: 1984 - Statistics Canada, Manufacturing Initiatives of Canada: National and Provincial Areas
1985-86 - Estimated by Economic Development & Trade

3 - Source: - Statistics Canada, Commodity Exports

4 - Source: - Statistics Canada, Private and Public Investment in Canada

5 - These are estimates by Economic Development & Trade based on industry contacts, Statistics Canada national data, and other secondary sources.

# PLASTIC PRODUCTS INDUSTRY

## INDUSTRY PROFILE

- Plastic products industries include establishments engaged in using synthetic resins (eg. polyethylene, polyvinyl chloride, polystyrene) to mold, extrude or fabricate basic plastic products such as foamed and expanded shapes and forms, plastic pipe and fittings, film & sheeting, and plastic bags.

- It should be noted that the statistics on value of shipments for this sector do not include consumer products with plastic parts or components (eg.. furniture and finishings, housewares, toys and leisure products).

- The Alberta plastics industry (similar to the Canadian industry) is characterized by a relatively large number of small scale operations producing a wide variety of products. The average establishment employs less than 30 people and has annual sales under $3 million.

- The three principal markets for plastics in Canada are packaging (33 percent), construction (22 percent) and automotive (12 percent). Most of the firms in Alberta manufacture products associated with either packaging (plastic bags, bottles, containers, etc.) or construction (eg. plastic pipe, foam insulation) to supply the local domestic market.

- While value of shipments in the plastic products industries account for less than 2 percent of total Alberta manufacturing shipments, there are significant opportunities for expansion through import replacement and increased exports.

- Exports of plastic products in 1986 (mainly plastic pipe and plastic bags) accounted for about 8 percent of the value of shipments.

## RECENT PERFORMANCE

- The value of Canadian plastic production increased by more than 10 percent in 1986. Shipments for plastic processors in Alberta increased at a similar rate despite the relatively poor performance of the Alberta economy. This can be attributed in part to the strong growth in consumer demand in Alberta, and the increased market share captured by plastic packaging materials, plus a wide variety of other plastic products.

- The performance of various segments of the plastics industry within Alberta have varied widely depending on the principal markets for their products.

- Establishments manufacturing packaging products (eg. plastic bottles, plastic bags, etc.) experienced relatively strong growth in demand in 1986, with most firms operating at or near capacity.

- Growth in the plastic pipe market has been much slower due to the low level of construction activity in Alberta and Western Canada. Plastic pipe manufacturers which account for approximately one-quarter of the plastic production in Alberta, are currently running 70 to 75 percent capacity.

- Other segments of the plastics industry in Alberta including: injection moulding, plastic film and sheeting, fibre glass reinforced plastics, and other fabricated plastics, produce a wide range of products, most of which experienced an increase in sales in 1986. Many of these companies often increase sales through the development of new product lines.

## FACTORS AFFECTING DEVELOPMENT AND GROWTH

- Plastics are expected to demonstrate growth in three areas: new products, improved products and new applications.

- New products and improved plastic materials are continually being developed for commercial use. Often these plastic products are used as a substitute for metal, glass, paper or other materials in existing items. Example of such products include plastic grocery bags, plastic bottles, and other plastic containers such as pails and oil drums.

- In growth industries such as electronics, new products are being designed which use plastic as component parts.

- A number of Alberta companies, particularly in the oilfield equipment manufacturing industry, are looking to diversify into plastics manufacturing.

- While handicapped by distance to major markets, Alberta plastics manufacturers do have the advantage of locally produced upstream resins such as polyethylene, polyvinyl chloride, and styrene.

# PRINTING AND PUBLISHING INDUSTRY

# Current Economic Indicators

## Printing and Publishing Industry

| | 1984 | 1985 | 1986 |
|---|---|---|---|
| Employment[1] | 6,488 | 6,693 | 6,875 |
| Value of Shipments[2] ($ Million) | 526 | 576 | 626 |
| Exports[3] ($ Million) | 2 | 2 | 36 |
| Investment[4] ($ Million) | 12 | 8 | 11 |
| Capacity Utilization[5] (percent) | 97 | 94 | 96 |

1 - Source: Alberta Career Development & Employment
Note: 1986 data have been adjusted by Economic Development & Trade to reflect recent changes in economic trends.

2 - Source: - Statistics Canada, Estimated Value of Goods of Own Manufacture

3 - Source: - Statistics Canada, Commodity Exports

4 - Source: - Statistics Canada, Private and Public Investment in Canada

5 - These are estimates by Economic Development & Trade based on industry contacts, Statistics Canada national data, and other secondary sources.

# PRINTING AND PUBLISHING INDUSTRY

## INDUSTRY PROFILE

- In 1986, the total value of shipments in the Alberta Printing and Publishing Industry was $626 million. This represented approximately 4 percent of the total value of manufacturing shipments in Alberta.

- This industry is labour-intensive. In 1986, it employed approximately 6,800 workers, which represented about 8 percent of total manufacturing employment in Alberta.

- The largest sector of the industry in terms of employment and number of firms is the commercial printing sector. This sector is composed of many small firms manufacturing custom made items. Markets are domestically oriented limiting export activities. Companies have difficulties maintaining high levels of production due to their limited domestic market and fierce price competition.

- The publishing and printing sector (newspapers, magazines and periodicals) accounts for almost half the value of shipments of the industry. The sector is largely dependent on the strength of the retail and service sector. Markets are domestically oriented limiting export activities. Advertising revenues play an important role in the shaping of this sector.

- The segment of the industry which has shown considerable growth has been business forms, in particular, computer-related business forms (now accounts for 50 percent of the business form market). Markets are mainly provincial but exports to Western Canadian provinces have increased over the past several years. Competition is fierce among the 25 companies in Alberta manufacturing business forms.

- The book publishing sector remains a small segment of the industry. Growth has been almost non-existent for years. Educational books remain a stable market for Alberta publishers. The sector in Alberta is over shadowed by big eastern firms.

## RECENT PERFORMANCE

- The printing and publishing industry in Alberta serves the needs of all businesses in the provincial economy, and in many respects is more like a business service industry than a manufacturing industry. Growth in this sector has paralleled the growth and development in many other business services such as advertising, management consulting, accounting and computer services.

- While economic growth in Alberta slowed considerably in 1986, the value shipments of the Printing and Publishing Industry experienced a strong increase from $576 million in 1985 to $626 million in 1986. This represented an 8.6 percent annual increase in the value of shipments.

- The industry experienced significant rationalization during the recession period 1981-1984. Current employment levels are down from the pre-recession high of 8,000 workers. The introduction of new technology has improved the productivity of many firms and this has enabled the industry to sustain growth over the past year.

## FACTORS AFFECTING FUTURE GROWTH AND DEVELOPMENT

- Alberta has become a major centre for computer related business forms in Western Canada. Accordingly, office automation will continue to be a driving force of growth for this segment of the industry.

- Growth in the Alberta newspaper/periodical industry is dependent upon the performance of retail sector. Despite a weaker economy in 1986, retail sales grew strongly and this sustained advertising budgets.

- Alberta's Printing and Publishing Industry consists largely of many small establishments. Many of these firms are not in a financial position to take advantage of new technological advances to be competitive.

# CONSUMER PRODUCTS INDUSTRY

# CONSUMER PRODUCTS INDUSTRY

## INDUSTRY PROFILE

- The consumer products industry includes the manufacture of furniture, clothing, textiles, secondary wood products, recreational vehicles, plastic consumer products, leather, sporting goods, etc. Office furniture & western wear/sportswear companies are the most established in this sector.

- The sector consists of 250 companies with a collective value of shipments estimated at $350 million in 1986 (2.3 percent of total Alberta manufacturing shipments) and employment of some 6100 workers (just under 8 percent of total Alberta manufacturing employment).

- Most of the establishments in this sector are relatively small scale operations serving the Alberta market, and to a lesser extent, the Western Canadian market.

- Exports outside of Canada accounted for less than 5 percent of the total value of shipments in 1986, and were primarily limited to a few companies in the areas of office furniture and sportswear.

- The sector is under-developed in Alberta and there are significant opportunities for import replacement.

## RECENT PERFORMANCE

- Despite the downturn in overall economic activity in Alberta last year, consumer expenditures remained relatively strong. Consumer spending as measured by retail sales, increased by 6 percent in 1986, resulting in stronger demand for most consumer products manufactured in Alberta.

- More recently, consumer spending has dropped off due to the low growth rate of personable disposable income and the unwillingness of consumers to accept higher debt levels.

## FACTORS AFFECTING FUTURE GROWTH AND DEVELOPMENT

- Most markets in North America for consumer products are relatively mature with the exception of the growing office furniture market in the U.S.A., and newer categories of sub-sectors such as microwave ovens and designer products such as fashion items. Expansion in Western Canada can be justified, not only on the basis of trends, but more on the basis of import replacement, export potential to Western U.S.A. markets, and on "niche" segmentation opportunities.

- The principal weakness of the existing firms is the lack of marketing expertise (particularly for exports) and the lack of working capital to sustain any expanded marketing efforts.

- The major constraint facing the Alberta industry is the small population base of Alberta and the relatively small population of Western Canada.

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